

Up & Coming

Computer Used To 'Move' Dirt At Nav Stations

SCOTT AFB, Ill. — The amount of grade-and-fill needed to help create the best signals from navigational aid stations is being determined by a computer plan here.

Tests being conducted by AF Communications Service's (AFCS) 1842d Electronics Engineering Group could save U.S. taxpayers money in earth-moving costs, AFCS said.

Project managers are using a computer system to determine the amount of earth that must be moved or added for the most efficient operation of instrument landing systems. Earth layout affects the strength of a station's generated navigational signal.

To insure the maximum accuracy of landing systems, it is necessary at times to grade and fill the surrounding area. "This method, particularly when the movement of several 100,000 cubic yards of dirt is necessary, is not only time-consuming, but extremely expensive," Jim Baggett said. Baggett is the project officer for the computer program.

The cost of moving dirt has climbed from 90 cents to more than \$5 a cubic yard in recent years, Baggett said.

With the use of the computer plan, a site can be "modeled" — mathematically built before the first yard of dirt is moved. Information on surface features, antenna heights, radio signals, flying runs and other data are fed, in different sets, to the computer. The impact these items have on radio bounce are computed.

The program in the computer then gradually shaves the hills and/or fills the hollows until the best signals are produced with the least projected amount of earth movement.

Colorful Radar

WASHINGTON — Say it in living color!

Such an idea is to be tested by the Federal Aviation Administration under a \$186,000 contract with the Raytheon Co.

The FAA intends to add more color to its radar displays to help air traffic controllers get a better reading on different information presented on their screens.

Four view displays will have color capabilities added for tests to be conducted at the FAA's air route traffic control center in Leesburg, Va., Raytheon said. Two multicolor displays will be delivered to the FAA's National Aviation Facilities Experimental Center in New Jersey.

The display systems will provide information in four colors — red, orange, yellow and green — rather than the single green now

used in the systems, the company said.

Here's what the colors will depict: red, navigation aids; orange, weather; yellow and green, aircraft data blocks. Yellow and green will provide controllers with the identity, altitude and other information on flights being handled.

Building Its Own

WASHINGTON — A former Pentagon official has told the House Armed Services Committee that NATO countries are serious about reducing their purchase of U.S. weapons systems.

Dr. Roger Shields, an economist and former Pentagon official, cited a decision by NATO countries to co-produce the advanced F-16 aircraft in Europe rather than buy it outright from the U.S.

According to Shields, the cost of European production is significantly more than the price of the aircraft off U.S. production lines. But, he told the committee, NATO members claimed it was worth it because of the technology transfer involved.

Shields said that NATO members look at the manufacturing of weapons in their countries as a means of promoting jobs and improving their economic health.

New Bomber Eyed

WASHINGTON — The FY 1980 defense budget is expected to contain funds to study the needs of a new manned penetrating bomber, an AF spokesman said.

The studies could lead to a successor to the B-1 bomber that was canceled by President Carter. Defense Department officials have said that a new bomber is needed — one different in design

Lightning Strikes Tested

By a Times Staff Writer

WASHINGTON — A "machine" used in the late 1890s has been duplicated near Hill AFB, Utah, in order to generate lightning strikes against aircraft.

Robert K. Golka, director for Project Tesla, told *Air Force Times* that the Tesla generator simulates the ball lightning that aircraft can encounter in flight.

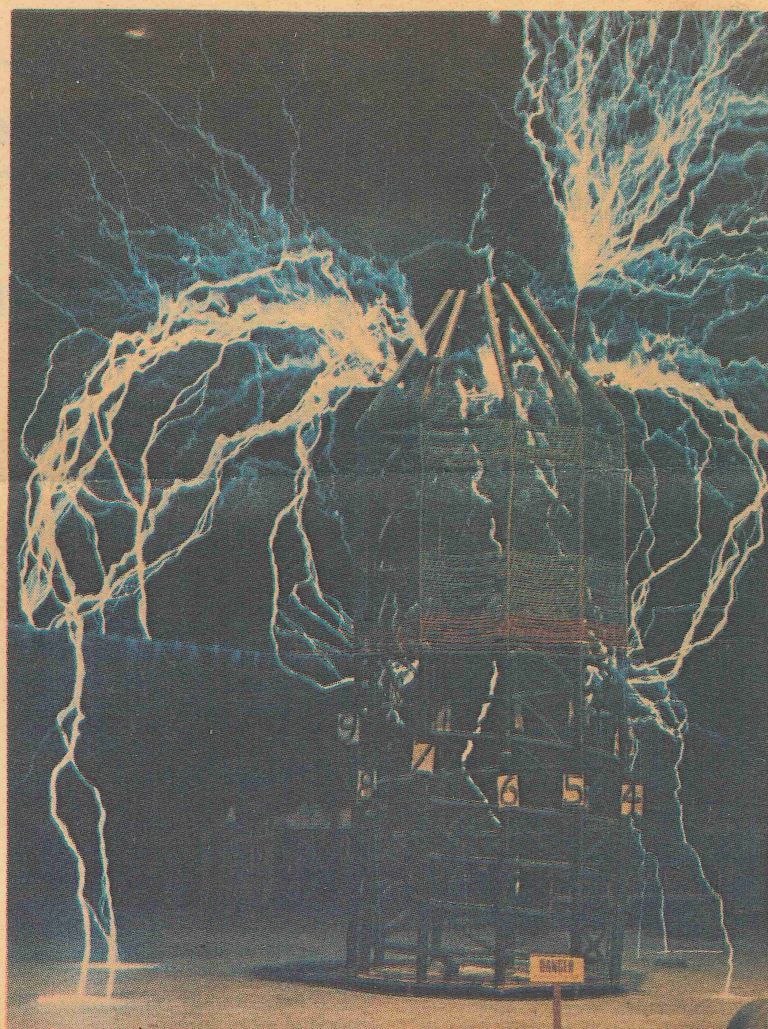
The idea, he added, is to determine ways to reinforce aircraft and their systems so that they can survive repeated lightning strikes. AF wants to determine aircraft "hardness," Golka said.

Golka, who has been working on the project for 10 years, traveled to Belgrade, Yugoslavia, in 1968 to learn more about the U.S.-conducted research of Nikola Tesla who invented various electric devices.

Ironically, Tesla's work was conducted in Colorado Springs, Colo., but his diary of 1899 was discovered by Golka in the Nikola Tesla Museum in Yugoslavia.

Golka said tests at the Wendover Auxiliary Airfield have been conducted mostly with aircraft models, but actual aircraft can and have been used. AF is inter-

ested in developing lightning protection for aircraft made with lightweight composite materials which can be penetrated by nature's electrical charges.



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Lightning can cause composites

to explode, Golka said.

The Tesla generator takes about 100,000 watts to produce lightning bolts. It has been modified several times to make it as "original" as possible, Golka said.

from the B-1 — by the 1990s. A program to evaluate potential contractors to support the AF bomber efforts reportedly is under way.

V/STOL Takes Off

ST. LOUIS, Mo. — Full-scale development of the Marine Corps AV-8B vertical/short takeoff and landing (V/STOL) aircraft is scheduled to start in January, the Defense Department said.

Marine Corps plans to purchase 350 AV-8Bs after flight tests are completed at the Naval Air Station at Patuxent River, Md.

The AV-8B flew for the first time at McDonnell Douglas Corp. facilities here recently. DoD officials said the AV-8B will more than double the payload or radius Marine pilots now experience with the craft's predecessor, the British Aerospace AV-8A Harrier.

Contracts

Hughes Aircraft Co., Calif., \$3.5 million for F-106A/B navigation system upgrade.
General Electric Co., Mass., \$3.1 million increase for J85-GE-21A engines.
Airborne Instruments Laboratory, N.Y., \$1.2 million for EF-111A aircraft ALQ-99 subassemblies.

TRW, Calif., \$3.6 million increase for Minuteman III retargeting capability updating.

TRW, Calif., \$1.7 million for Space and Missile Systems Organization operational flight test support.

TRW, Calif., \$1 million increase for Defense Satellite Communication System II antenna modifications and other work.

Ford Aerospace and Communications Corp., Calif., \$8.2 million for logistics support of AF Satellite Control Facility at Palo Alto, Calif., and other locations.

Rolls Royce Ltd., England, \$1.7 million for A-7 aircraft engine modification kits.

McDonnell Douglas Corp., Mo., \$1.9 million for F-15 radar data processor spare parts.

Geodynamics Corp., Calif., \$2 million for MX program technical assistance.

United Technologies Corp., Calif., \$6 million increase for Titan missile work.

Tektronix Inc., Ore., \$1.4 million for 100 megahertz oscilloscopes.

CG: Divorce No Cause for BAQ Hikes

By a Times Staff Writer

WASHINGTON — Service members' basic allowance for quarters should not be increased simply because they are divorced or separated from other service members and are paying child support, the U.S. Comptroller General has ruled.

The services apparently have been paying too much BAQ to some such members, the comptroller indicated in a recent decision (B-191617) designed to clarify some rules under which BAQ is paid.

BAQ is not payable to a member who lives in single-type government quarters and pays child support to a separated or divorced spouse who also is a service member, if that spouse has custody of

their child and is assigned to adequate family quarters.

BAQ at the "without-dependent" rate is payable to a member who does not have adequate single quarters when the estranged spouse has child custody and has adequate family government quarters, the comptroller said.

Under the services' pay and allowances system, all members must receive either adequate quarters or quarters allowances for themselves and their dependents.

When members married to members are separated or divorced, both retain their legal rights either to adequate quarters or to a quarters allowance, the comptroller said.

If the estranged spouse with child custody is furnished adequate family quarters, the other spouse is entitled either to single quarters or to a BAQ at the without-dependents rate, the comptroller said.

Some apparently have received BAQ at the with-dependent rate, the comptroller indicated.

The without-dependent rate is lower for all ranks. For example, an E-7 receives \$150.30 monthly at the without-dependent rate and \$231.90 at the with-dependent rate. An O-3 receives \$231.90 at the without-dependent rate and \$286.20 at the with-dependent rate.

BAQ entitlements are not related to the amount of alimony and child support paid by one member

to his separated or divorced spouse who also is a member, the comptroller said.

In many cases, such payments are not reduced when the spouse with child custody is assigned base housing.

That means the estranged spouse with child custody may receive both full support payments — which presumably help pay housing expenses, among other things — plus "free" housing from the government.

It is the responsibility of members liable for such payments to have their support agreements adjusted when a spouse and child are furnished government quarters at no cost to either spouse, the comptroller said.